

Microstructure changes caused by thermal etching of sintered ZnTiO₃

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Abstract

Polishing and thermal etching was performed on ZnTiO₃ sintered ceramic. Two set of specimens were recorded, on higher 1200°C/1100°C sintered/etched, and lower 900°C/800°C sintered/etched. Phase composition, crystallite sizes and grain size distributions before and after etching were compared. Grain size enlargement was noted.

Dilatometry

of sintered and reheated ZnTiO₃ specimens at higher 1200°C/1100°C and lower 900°C/800°C temperatures.

Crystallite sizes and phase composition determined from XRD

for sintered and reheated samples at higher 1200°C/1100°C and lower 900°C/800°C temperatures.

Micrographs for sintered, AFM, and reheated, SEM, samples at higher 1200°C/1100°C and lower 900°C/800°C temperatures.

Grain size distribution determined from micrographs before (AFM) and after (SEM) second thermal treatment

